

PATENT  
2459-1-003 CIP

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT: MING-MING ZHOU *ET AL.*

SERIAL NO. : UNASSIGNED EXAMINER : UNKNOWN

FILED : HEREWITH ART UNIT : UNKNOWN

FOR : METHODS OF IDENTIFYING MODULATORS OF  
BROMODOMAINS

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DATE OF DEPOSIT : February 16, 2001

STATEMENT IN SUPPORT OF THE FILING/SUBMISSION OF A  
NUCLEOTIDE/AMINO ACID SEQUENCE LISTING IN  
ACCORDANCE WITH 37 CFR §1.821 - 1.825

ASSISTANT COMMISSIONER FOR PATENTS  
WASHINGTON, D.C. 20231

Dear Sir:

MICHAEL D. DAVIS, attorney of record, hereby states as follows:

I hereby state that the content of the paper and computer readable copies of the Sequence Listing submitted in accordance with 37 CFR §1.821(c), (e) and (f) respectively, are the same.

DATED: February 16, 2001

  
MICHAEL D. DAVIS

## SEQUENCE LISTING

<110> Zhou, Ming-Ming  
Aggarwal, Aneel  
Verdin, Eric  
Ott, Melanie

<120> Methods of Identifying Modulators of Bromodomains

<130> 2459-1-003CIP

<140> Unassigned

<141> 2001-02-16

<150> 09/510,314

<151> 2000-02-22

<160> 59

<170> PatentIn version 3.0

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 <213> Homo sapiens

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 Pro Pro Ala Pro Pro Gln Gly Ser Pro Cys Ala Ala Ala Gly Gly  
 35 40 45  
 Ser Gly Ala Cys Gly Pro Ala Thr Ala Val Ala Ala Ala Gly Thr Ala  
 50 55 60  
 Glu Gly Pro Gly Gly Gly Ser Ala Arg Ile Ala Val Lys Lys Ala  
 65 70 75 80  
 Gln Leu Arg Ser Ala Pro Arg Ala Lys Lys Leu Glu Lys Leu Gly Val  
 85 90 95  
 Tyr Ser Ala Cys Lys Ala Glu Glu Ser Cys Lys Cys Asn Gly Trp Lys

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|---|-----|-----|
| Asn Pro Asn Pro Ser Pro Thr Pro Pro Arg Ala Asp Leu Gln Gln Ile |     |     |
| 115 120 125   |     |     |
| Ile Val Ser Leu Thr Glu Ser Cys Arg Ser Cys Ser His Ala Leu Ala |     |     |
| 130 135 140   |     |     |
| Ala His Val Ser His Leu Glu Asn Val Ser Glu Glu Glu Met Asn Arg |     |     |
| 145 150 155 160   |     |     |
| Leu Leu Gly Ile Val Leu Asp Val Glu Tyr Leu Phe Thr Cys Val His |     |     |
| 165 170 175   |     |     |
| Lys Glu Glu Asp Ala Asp Thr Lys Gln Val Tyr Phe Tyr Leu Phe Lys |     |     |
| 180 185 190   |     |     |
| Leu Leu Arg Lys Ser Ile Leu Gln Arg Gly Lys Pro Val Val Glu Gly |     |     |
| 195 200 205   |     |     |
| Ser Leu Glu Lys Lys Pro Pro Phe Glu Lys Pro Ser Ile Glu Gln Gly |     |     |
| 210 215 220   |     |     |
| Val Asn Asn Phe Val Gln Tyr Lys Phe Ser His Leu Pro Ala Lys Glu |     |     |
| 225 230 235 240   |     |     |
| Arg Gln Thr Ile Val Glu Leu Ala Lys Met Phe Leu Asn Arg Ile Asn |     |     |
| 245 250 255   |     |     |
| Tyr Trp His Leu Glu Ala Pro Ser Gln Arg Arg Leu Arg Ser Pro Asn |     |     |
| 260 265 270   |     |     |
| Asp Asp Ile Ser Gly Tyr Lys Glu Asn Tyr Thr Arg Trp Leu Cys Tyr |     |     |
| 275 280 285   |     |     |
| Cys Asn Val Pro Gln Phe Cys Asp Ser Leu Pro Arg Tyr Glu Thr Thr |     |     |
| 290 295 300   |     |     |
| Gln Val Phe Gly Arg Thr Leu Leu Arg Ser Val Phe Thr Val Met Arg |     |     |
| 305 310 315 320   |     |     |
| Arg Gln Leu Leu Glu Gln Ala Arg Gln Glu Lys Asp Lys Leu Pro Leu |     |     |
| 325 330 335   |     |     |
| Glu Lys Arg Thr Leu Ile Leu Thr His Phe Pro Lys Phe Leu Ser Met |     |     |
| 340 345 350   |     |     |
| Leu Glu Glu Val Tyr Ser Gln Asn Ser Pro Ile Trp Asp Gln Asp     |     |     |
| 355 360 365   |     |     |
| Phe Leu Ser Ala Ser Ser Arg Thr Ser Gln Leu Gly Ile Gln Thr Val |     |     |
| 370 375 380   |     |     |
| Ile Asn Pro Pro Val Ala Gly Thr Ile Ser Tyr Asn Ser Thr Ser     |     |     |
| 385 390 395 400   |     |     |
| Ser Ser Leu Glu Gln Pro Asn Ala Gly Ser Ser Ser Pro Ala Cys Lys |     |     |
| 405 410 415   |     |     |
| Ala Ser Ser Gly Leu Glu Ala Asn Pro Gly Glu Lys Arg Lys Met Thr |     |     |
| 420 425 430   |     |     |
| Asp Ser His Val Leu Glu Ala Lys Lys Pro Arg Val Met Gly Asp     |     |     |
| 435 440 445   |     |     |
| Ile Pro Met Glu Leu Ile Asn Glu Val Met Ser Thr Ile Thr Asp Pro |     |     |
| 450 455 460   |     |     |
| Ala Ala Met Leu Gly Pro Glu Thr Asn Phe Leu Ser Ala His Ser Ala |     |     |

|   |     |     |     |
|---|-----|-----|-----|
| 465   | 470 | 475 | 480 |
| Arg Asp Glu Ala Ala Arg Leu Glu Glu Arg Arg Gly Val Ile Glu Phe |     |     |     |
| 485   | 490 | 495 |     |
| His Val Val Gly Asn Ser Leu Asn Gln Lys Pro Asn Lys Lys Ile Leu |     |     |     |
| 500   | 505 | 510 |     |
| Met Trp Leu Val Gly Leu Gln Asn Val Phe Ser His Gln Leu Pro Arg |     |     |     |
| 515   | 520 | 525 |     |
| Met Pro Lys Glu Tyr Ile Thr Arg Leu Val Phe Asp Pro Lys His Lys |     |     |     |
| 530   | 535 | 540 |     |
| Thr Leu Ala Leu Ile Lys Asp Gly Arg Val Ile Gly Gly Ile Cys Phe |     |     |     |
| 545   | 550 | 555 | 560 |
| Arg Met Phe Pro Ser Gln Gly Phe Thr Glu Ile Val Phe Cys Ala Val |     |     |     |
| 565   | 570 | 575 |     |
| Thr Ser Asn Glu Gln Val Lys Gly Tyr Gly Thr His Leu Met Asn His |     |     |     |
| 580   | 585 | 590 |     |
| Leu Lys Glu Tyr His Ile Lys His Asp Ile Leu Asn Phe Leu Thr Tyr |     |     |     |
| 595   | 600 | 605 |     |
| Ala Asp Glu Tyr Ala Ile Gly Tyr Phe Lys Lys Gln Gly Phe Ser Lys |     |     |     |
| 610   | 615 | 620 |     |
| Glu Ile Lys Ile Pro Lys Thr Lys Tyr Val Gly Tyr Ile Lys Asp Tyr |     |     |     |
| 625   | 630 | 635 | 640 |
| Glu Gly Ala Thr Leu Met Gly Cys Glu Leu Asn Pro Arg Ile Pro Tyr |     |     |     |
| 645   | 650 | 655 |     |
| Thr Glu Phe Ser Val Ile Ile Lys Lys Gln Lys Glu Ile Ile Lys Lys |     |     |     |
| 660   | 665 | 670 |     |
| Leu Ile Glu Arg Lys Gln Ala Gln Ile Arg Lys Val Tyr Pro Gly Leu |     |     |     |
| 675   | 680 | 685 |     |
| Ser Cys Phe Lys Asp Gly Val Arg Gln Ile Pro Ile Glu Ser Ile Pro |     |     |     |
| 690   | 695 | 700 |     |
| Gly Ile Arg Glu Thr Gly Trp Lys Pro Ser Gly Lys Glu Lys Ser Lys |     |     |     |
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| Glu Pro Arg Asp Pro Asp Gln Leu Tyr Ser Thr Leu Lys Ser Ile Leu |     |     |     |
| 725   | 730 | 735 |     |
| Gln Gln Val Lys Ser His Gln Ser Ala Trp Pro Phe Met Glu Pro Val |     |     |     |
| 740   | 745 | 750 |     |
| Lys Arg Thr Glu Ala Pro Gly Tyr Tyr Glu Val Ile Arg Phe Pro Met |     |     |     |
| 755   | 760 | 765 |     |
| Asp Leu Lys Thr Met Ser Glu Arg Leu Lys Asn Arg Tyr Tyr Val Ser |     |     |     |
| 770   | 775 | 780 |     |
| Lys Lys Leu Phe Met Ala Asp Leu Gln Arg Val Phe Thr Asn Cys Lys |     |     |     |
| 785   | 790 | 795 | 800 |
| Glu Tyr Asn Ala Ala Glu Ser Glu Tyr Tyr Lys Cys Ala Asn Ile Leu |     |     |     |
| 805   | 810 | 815 |     |
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| 820   | 825 | 830 |     |

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<211> 12
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<213> artificial sequence

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<223> X is two to three amino acids. Each of these can be any amino
      ac
      id

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<221> X
<222> (4)..(4)
<223> The X is five to eight amino acids. Each of these can be any
      ami
      no acid

<220>
<221> X
<222> (5)..(5)
<223> X is a single amino acid that is either Pro, Lys, or His.

<220>
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<222> (6)..(6)
<223> This X is any single amino acid.

<220>
<221> X
<222> (8)..(8)
<223> This X is a single amino acid that can be either Tyr, Phe, or
      His

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<221> X
<222> (9)..(9)
<223> X is 5 amino acids. Each of these can be any amino acid.

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<221> X
<222> (11)..(11)
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<210> 4
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 <222> (8)...(8)  
 <223> The X represents an acetyl lysine.

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<210> 6  
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 <213> artificial sequence

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 <211> 110  
 <212> PRT  
 <213> Homo sapiens, peptide

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Pro Val Lys Arg Thr Glu Ala Pro Gly Tyr Tyr Glu Val Ile Arg Ser  
 35 40 45

Pro Met Asp Leu Lys Thr Met Ser Glu Arg Leu Lys Asn Arg Tyr Tyr  
 50 55 60

Val Ser Lys Lys Leu Phe Met Ala Asp Leu Gln Arg Val Phe Thr Asn  
 65 70 75 80

Cys Lys Glu Tyr Asn Ala Pro Glu Ser Glu Tyr Tyr Lys Cys Ala Asn  
 85 90 95

Ile Leu Glu Lys Phe Phe Ser Lys Ile Lys Glu Ala Gly  
 100 105 110

<210> 8  
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 <213> Homo sapiens

&lt;400&gt; 8

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 20 25 30

Pro Val Lys Lys Ser Glu Ala Pro Asp Tyr Tyr Glu Val Ile Arg Phe  
 35 40 45

Pro Ile Asp Leu Lys Thr Met Thr Glu Arg Leu Arg Ser Arg Tyr Tyr  
 50 55 60

Val Thr Arg Lys Leu Phe Val Ala Asp Leu Gln Arg Val Ile Ala Asn  
 65 70 75 80

Cys Arg Glu Tyr Asn Pro Pro Asp Ser Glu Tyr Cys Arg Cys Ala Ser  
 85 90 95

Ala Leu Glu Lys Phe Phe Tyr Phe Lys Leu Lys Glu Gly Gly  
 100 105 110

<210> 9  
 <211> 109  
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 <213> Tetrahymena thermophila

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Ile Glu Asn Met Lys Arg His Lys Gln Ser Trp Pro Phe Leu Asp Pro  
 20 25 30

Val Asn Lys Asp Asp Val Pro Asp Tyr Tyr Asp Val Ile Thr Asp Pro  
 35 40 45

Ile Asp Ile Lys Ala Ile Glu Lys Lys Leu Gln Asn Asn Gln Tyr Val  
 50 55 60

Asp Lys Asp Gln Phe Ile Lys Asp Val Lys Arg Ile Phe Thr Asn Ala  
 65 70 75 80

Lys Ile Tyr Asn Gln Pro Asp Thr Ile Tyr Tyr Lys Ala Ala Lys Glu  
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Leu Glu Asp Phe Val Glu Pro Tyr Leu Thr Lys Leu Lys  
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<210> 10  
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 <213> Saccharomyces cerevisiae

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Leu Thr Glu Leu Gln Asn His Ala Ala Ala Trp Pro Phe Leu Gln Pro  
 20 25 30

Val Asn Lys Glu Glu Val Pro Asp Tyr Tyr Asp Phe Ile Lys Glu Pro  
 35 40 45

Met Asp Leu Ser Thr Met Glu Ile Lys Leu Glu Ser Asn Lys Tyr Gln  
 50 55 60

Lys Met Glu Asp Phe Ile Tyr Asp Ala Arg Leu Val Phe Asn Asn Cys  
 65 70 75 80

Arg Met Tyr Asn Gly Glu Asn Thr Ser Tyr Tyr Lys Tyr Ala Asn Arg  
 85 90 95

Leu Glu Lys Phe Phe Asn Asn Lys Val Lys Glu Ile Pro  
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Lys Lys Ile Phe Lys Pro Glu Glu Leu Arg Gln Ala Leu Met Pro Thr  
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 20 25 30

Pro Val Asp Pro Gln Leu Leu Gly Ile Pro Asp Tyr Phe Asp Ile Val  
 35 40 45

Lys Ser Pro Met Asp Leu Ser Thr Ile Lys Arg Lys Leu Asp Thr Gly  
 50 55 60

Gln Tyr Gln Glu Pro Trp Gln Tyr Val Asp Asp Ile Trp Leu Met Phe  
 65 70 75 80

Asn Asn Ala Trp Leu Tyr Asn Arg Lys Thr Ser Arg Val Tyr Lys Tyr  
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Cys Ser Lys Leu Ser Glu Val Phe Glu Gln Glu Ile Asp Pro Val Met  
 100 105 110

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Pro Val Asp Pro Gln Leu Leu Gly Ile Pro Asp Tyr Phe Asp Ile Val  
 35 40 45

Lys Asn Pro Met Asp Leu Ser Thr Ile Lys Arg Lys Leu Asp Thr Gly  
 50 55 60

Gln Tyr Gln Glu Pro Trp Gln Tyr Val Asp Asp Val Trp Leu Met Phe  
 65 70 75 80

Asn Asn Ala Trp Leu Tyr Asn Arg Lys Thr Ser Arg Val Tyr Lys Phe  
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Cys Ser Lys Leu Ala Glu Val Phe Glu Gln Glu Ile Asp Pro Val Met  
 100 105 110

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 <211> 112  
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<213> Mus musculus

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 20 25 30

Pro Val Asp Pro Gln Leu Leu Gly Ile Pro Asp Tyr Phe Asp Ile Val  
 35 40 45

Lys Asn Pro Met Asp Leu Ser Thr Ile Lys Arg Lys Leu Asp Thr Gly  
 50 55 60

Gln Tyr Gln Glu Pro Trp Gln Tyr Val Asp Asp Val Arg Leu Met Phe  
 65 70 75 80

Asn Asn Ala Trp Leu Tyr Asn Arg Lys Thr Ser Arg Val Tyr Lys Phe  
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Cys Ser Lys Leu Ala Glu Val Phe Glu Gln Glu Ile Asp Pro Val Met  
 100 105 110

<210> 14

<211> 111

<212> PRT

<213> Caenorhabditis elegans

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Val Asp Ala Lys Leu Leu Asn Ile Pro Asp Tyr His Glu Ile Ile Lys  
 35 40 45

Arg Pro Met Asp Leu Glu Thr Val His Lys Lys Leu Tyr Ala Gly Gln  
 50 55 60

Tyr Gln Asn Ala Gly Gln Phe Cys Asp Asp Ile Trp Leu Met Leu Asp  
 65 70 75 80

Asn Ala Trp Leu Tyr Asn Arg Lys Asn Ser Lys Val Tyr Lys Tyr Gly  
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Leu Lys Leu Ser Glu Met Phe Val Ser Glu Met Asp Pro Val Met  
 100 105 110

<210> 15

<211> 110

<212> PRT

<213> Homo sapiens

<400> 15

Arg Arg Arg Thr Asp Pro Met Val Thr Leu Ser Ser Ile Leu Glu Ser  
 1 5 10 15

Ile Ile Asn Asp Met Arg Asp Leu Pro Asn Thr Tyr Pro Phe His Thr  
 20 25 30

Pro Val Asn Ala Lys Val Val Lys Asp Tyr Tyr Lys Ile Ile Thr Arg  
 35 40 45

Pro Met Asp Leu Gln Thr Leu Arg Glu Asn Val Arg Lys Arg Leu Tyr  
 50 55 60

Pro Ser Arg Glu Glu Phe Arg Glu His Leu Glu Leu Ile Val Lys Asn  
 65 70 75 80

Ser Ala Thr Tyr Asn Gly Pro Lys His Ser Leu Thr Gln Ile Ser Gln  
 85 90 95

Ser Met Leu Asp Leu Cys Asp Glu Lys Leu Lys Glu Lys Glu  
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<210> 16

<211> 110

<212> PRT

<213> Mesocricetus auratus

<400> 16

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 20 25 30

Pro Val Asn Ala Lys Val Val Lys Asp Tyr Tyr Lys Ile Ile Thr Arg  
 35 40 45

Pro Met Asp Leu Gln Thr Leu Arg Glu Asn Val Arg Lys Arg Leu Tyr  
 50 55 60

Pro Ser Arg Glu Glu Phe Arg Glu His Leu Glu Leu Ile Val Lys Asn  
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Ser Met Leu Asp Leu Cys Asp Glu Lys Leu Lys Glu Lys Glu  
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<210> 17

<211> 111

<212> PRT

<213> Homo sapiens

<400> 17

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His Pro Val Asn Lys Lys Phe Val Pro Asp Tyr Tyr Lys Val Ile Val  
 35 40 45

Asn Pro Met Asp Leu Glu Thr Ile Arg Lys Asn Ile Ser Lys His Lys  
 50 55 60

Tyr Gln Ser Arg Glu Ser Phe Leu Asp Asp Val Asn Leu Ile Leu Ala  
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Asn Ser Val Lys Tyr Asn Gly Pro Glu Ser Gln Tyr Thr Lys Thr Ala  
 85 90 95

Gln Glu Ile Val Asn Val Cys Tyr Gln Thr Leu Thr Glu Tyr Asp  
 100 105 110

<210> 18

<211> 111  
 <212> PRT  
 <213> Mesocricetus auratus

<400> 18

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 1 5 10 15

Ile Val Thr Gln Lys Met Met Ala Val Pro Asp Ser Trp Pro Phe His  
 20 25 30

His Pro Val Asn Lys Lys Phe Val Pro Asp Tyr Tyr Lys Val Ile Val  
 35 40 45

Ser Pro Met Asp Leu Glu Thr Ile Arg Lys Asn Ile Ser Lys His Lys  
 50 55 60

Tyr Gln Ser Arg Glu Ser Phe Leu Asp Asp Val Asn Leu Ile Leu Ala  
 65 70 75 80

Asn Ser Val Lys Tyr Asn Gly Ser Glu Ser Gln Tyr Thr Lys Thr Ala  
 85 90 95

Gln Glu Ile Val Asn Val Cys Tyr Gln Thr Leu Thr Glu Tyr Asp  
 100 105 110

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 <211> 111  
 <212> PRT  
 <213> Homo sapiens

<400> 19

Lys Pro Gly Arg Val Thr Asn Gln Leu Gln Tyr Leu His Lys Val Val  
 1 5 10 15

Met Lys Ala Leu Trp Lys His Gln Phe Ala Trp Pro Phe Arg Gln Pro  
 20 25 30

Val Asp Ala Val Lys Leu Gly Leu Pro Asp Tyr His Lys Ile Ile Lys  
 35 40 45

Gln Pro Met Asp Met Gly Thr Ile Lys Arg Arg Leu Glu Asn Asn Tyr  
 50 55 60

Tyr Trp Ala Ala Ser Glu Cys Met Gln Asp Phe Asn Thr Met Phe Thr  
 65 70 75 80

Asn Cys Tyr Ile Tyr Asn Lys Pro Thr Asp Asp Ile Val Leu Met Ala  
 85 90 95

Gln Thr Leu Glu Lys Ile Phe Leu Gln Lys Val Ala Ser Met Pro  
 100 105 110

<210> 20  
 <211> 111  
 <212> PRT  
 <213> Homo sapiens

<400> 20

Lys Pro Gly Arg Lys Thr Asn Gln Leu Gln Tyr Met Gln Asn Val Val  
 1 5 10 15

Val Lys Thr Leu Trp Lys His Gln Phe Ala Trp Pro Phe Tyr Gln Pro  
 20 25 30

Val Asp Ala Ile Lys Leu Asn Leu Pro Asp Tyr His Lys Ile Ile Lys

|    |    |    |
|----|----|----|
| 35 | 40 | 45 |
|----|----|----|

|   |    |    |
|---|----|----|
| Asn Pro Met Asp Met Gly Thr Ile Lys Lys Arg Leu Glu Asn Asn Tyr |    |    |
| 50  | 55 | 60 |

|   |    |    |
|---|----|----|
| Tyr Trp Ser Ala Ser Glu Cys Met Gln Asp Phe Asn Thr Met Phe Thr |    |    |
| 65  | 70 | 75 |
| 80  |    |    |

|   |    |    |
|---|----|----|
| Asn Cys Tyr Ile Tyr Asn Lys Pro Thr Asp Asp Ile Val Leu Met Ala |    |    |
| 85  | 90 | 95 |

|   |     |     |
|---|-----|-----|
| Gln Ala Leu Glu Lys Ile Phe Leu Gln Lys Val Ala Gln Met Pro |     |     |
| 100   | 105 | 110 |

<210> 21

<211> 111

<212> PRT

<213> Drosophila melanogaster

<400> 21

|   |   |    |
|---|---|----|
| Arg Pro Gly Arg Asn Thr Asn Gln Leu Gln Tyr Leu Ile Lys Thr Val |   |    |
| 1   | 5 | 10 |
| 15  |   |    |

|   |    |    |
|---|----|----|
| Met Lys Val Ile Trp Lys His His Phe Ser Trp Pro Phe Gln Gln Pro |    |    |
| 20  | 25 | 30 |

|   |    |    |
|---|----|----|
| Val Asp Ala Lys Lys Leu Asn Leu Pro Asp Tyr His Lys Ile Ile Lys |    |    |
| 35  | 40 | 45 |

|   |    |    |
|---|----|----|
| Gln Pro Met Asp Met Gly Thr Ile Lys Lys Arg Leu Glu Asn Asn Tyr |    |    |
| 50  | 55 | 60 |

|   |    |    |
|---|----|----|
| Tyr Trp Ser Ala Lys Glu Thr Ile Gln Asp Phe Asn Thr Met Phe Asn |    |    |
| 65  | 70 | 75 |
| 80  |    |    |

|   |    |    |
|---|----|----|
| Asn Cys Tyr Val Tyr Asn Lys Pro Gly Glu Asp Val Val Val Met Ala |    |    |
| 85  | 90 | 95 |
| *   |    |    |

|   |     |     |
|---|-----|-----|
| Gln Thr Leu Glu Lys Val Phe Leu Gln Lys Ile Glu Ser Met Pro |     |     |
| 100   | 105 | 110 |

<210> 22

<211> 109

<212> PRT

<213> Saccharomyces cerevisiae

<400> 22

|   |   |    |
|---|---|----|
| Asn Pro Ile Pro Lys His Gln Gln Lys His Ala Leu Leu Ala Ile Lys |   |    |
| 1   | 5 | 10 |
| 15  |   |    |

|   |    |    |
|---|----|----|
| Ala Val Lys Arg Leu Lys Asp Ala Arg Pro Phe Leu Gln Pro Val Asp |    |    |
| 20  | 25 | 30 |

|   |    |    |
|---|----|----|
| Pro Val Lys Leu Asp Ile Pro Phe Tyr Phe Asn Tyr Ile Lys Arg Pro |    |    |
| 35  | 40 | 45 |

|   |    |    |
|---|----|----|
| Met Asp Leu Ser Thr Ile Glu Arg Lys Leu Asn Val Gly Ala Tyr Glu |    |    |
| 50  | 55 | 60 |

|   |    |    |
|---|----|----|
| Val Pro Glu Gln Ile Thr Glu Asp Phe Asn Leu Met Val Asn Asn Ser |    |    |
| 65  | 70 | 75 |
| 80  |    |    |

|   |    |    |
|---|----|----|
| Ile Lys Phe Asn Gly Pro Asn Ala Gly Ile Ser Gln Met Ala Arg Asn |    |    |
| 85  | 90 | 95 |

|   |     |  |
|---|-----|--|
| Ile Gln Ala Ser Phe Glu Lys His Met Leu Asn Met Pro |     |  |
| 100   | 105 |  |

<210> 23  
 <211> 113  
 <212> PRT  
 <213> Homo sapiens

<400> 23

Lys Lys Gly Lys Leu Ser Glu Gln Leu Lys His Cys Asn Gly Ile Leu  
 1 5 10 15

Lys Glu Leu Leu Ser Lys Lys His Ala Ala Tyr Ala Trp Pro Phe Tyr  
 20 25 30

Lys Pro Val Asp Ala Ser Ala Leu Gly Leu His Asp Tyr His Asp Ile  
 35 40 45

Ile Lys His Pro Met Asp Leu Ser Thr Val Lys Arg Lys Met Glu Asn  
 50 55 60

Arg Asp Tyr Arg Asp Ala Gln Glu Phe Ala Ala Asp Val Arg Leu Met  
 65 70 75 80

Phe Ser Asn Cys Tyr Lys Tyr Asn Pro Pro Asp His Asp Val Val Ala  
 85 90 95

Met Ala Arg Lys Leu Gln Asp Val Phe Glu Phe Arg Tyr Ala Lys Met  
 100 105 110

Pro

<210> 24  
 <211> 113  
 <212> PRT  
 <213> Homo sapiens

<400> 24

Lys Lys Gly Lys Leu Ser Glu His Leu Arg Tyr Cys Asp Ser Ile Leu  
 1 5 10 15

Arg Glu Met Leu Ser Lys Lys His Ala Ala Tyr Ala Trp Pro Phe Tyr  
 20 25 30

Lys Pro Val Asp Ala Glu Ala Leu Glu Leu His Asp Tyr His Asp Ile  
 35 40 45

Ile Lys His Pro Met Asp Leu Ser Thr Val Lys Arg Lys Met Asp Gly  
 50 55 60

Arg Glu Tyr Pro Asp Ala Gln Gly Phe Ala Ala Asp Val Arg Leu Met  
 65 70 75 80

Phe Ser Asn Cys Tyr Lys Tyr Asn Pro Pro Asp His Glu Val Val Ala  
 85 90 95

Met Ala Arg Lys Leu Gln Asp Val Phe Glu Met Arg Phe Ala Lys Met  
 100 105 110

Pro

<210> 25  
 <211> 113  
 <212> PRT  
 <213> Drosophila melanogaster

<400> 25

Asn Lys Glu Lys Leu Ser Asp Ala Leu Lys Ser Cys Asn Glu Ile Leu  
 1 5 10 15  
 Lys Glu Leu Phe Ser Lys Lys His Ser Gly Tyr Ala Trp Pro Phe Tyr  
 20 25 30  
 Lys Pro Val Asp Ala Glu Met Leu Gly Leu His Asp Tyr His Asp Ile  
 35 40 45  
 Ile Lys Lys Pro Met Asp Leu Gly Thr Val Lys Arg Lys Met Asp Asn  
 50 55 60  
 Arg Glu Tyr Lys Ser Ala Pro Glu Phe Ala Ala Asp Val Arg Leu Ile  
 65 70 75 80  
 Phe Thr Asn Cys Tyr Lys Tyr Asn Pro Pro Asp His Asp Val Val Ala  
 85 90 95  
 Met Gly Arg Lys Leu Gln Asp Val Phe Glu Met Arg Tyr Ala Asn Ile  
 100 105 110

Pro

<210> 26  
 <211> 113  
 <212> PRT  
 <213> *Saccharomyces cerevisiae*  
 <400> 26  
 Lys Ser Lys Arg Leu Gln Gln Ala Met Lys Phe Cys Gln Ser Val Leu  
 1 5 10 15  
 Lys Glu Leu Met Ala Lys Lys His Ala Ser Tyr Asn Tyr Pro Phe Leu  
 20 25 30  
 Glu Pro Val Asp Pro Val Ser Met Asn Leu Pro Thr Tyr Phe Asp Tyr  
 35 40 45  
 Val Lys Glu Pro Met Asp Leu Gly Thr Ile Ala Lys Lys Leu Asn Asp  
 50 55 60  
 Trp Gln Tyr Gln Thr Met Glu Asp Phe Glu Arg Glu Val Arg Leu Val  
 65 70 75 80  
 Phe Lys Asn Cys Tyr Thr Phe Asn Pro Asp Gly Thr Ile Val Asn Met  
 85 90 95  
 Met Gly His Arg Leu Glu Glu Val Phe Asn Ser Lys Trp Ala Asp Arg  
 100 105 110

Pro

<210> 27  
 <211> 108  
 <212> PRT  
 <213> *Homo sapiens*  
 <400> 27  
 Met Glu Met Gln Leu Thr Pro Phe Leu Ile Leu Leu Arg Lys Thr Leu  
 1 5 10 15  
 Glu Gln Leu Gln Glu Lys Asp Thr Gly Asn Ile Phe Ser Glu Pro Val  
 20 25 30

Pro Leu Ser Glu Val Pro Asp Tyr Leu Asp His Ile Lys Lys Pro Met  
 35 40 45

Asp Phe Phe Thr Met Lys Gln Asn Leu Glu Ala Tyr Arg Tyr Leu Asn  
 50 55 60

Phe Asp Asp Phe Glu Glu Asp Phe Asn Leu Ile Val Ser Asn Cys Leu  
 65 70 75 80

Lys Tyr Asn Ala Lys Asp Thr Ile Phe Tyr Arg Ala Ala Val Arg Leu  
 85 90 95

Arg Glu Gln Gly Gly Ala Val Val Arg Gln Ala Arg  
 100 105

<210> 28  
 <211> 113  
 <212> PRT  
 <213> Homo sapiens

<400> 28

Ser Glu Asp Gln Glu Ala Ile Gln Ala Gln Lys Ile Trp Lys Lys Ala  
 1 5 10 15

Ile Met Leu Val Trp Arg Ala Ala Ala Asn His Arg Tyr Ala Asn Val  
 20 25 30

Phe Leu Gln Pro Val Thr Asp Asp Ile Ala Pro Gly Tyr His Ser Ile  
 35 40 45

Val Gln Arg Pro Met Asp Leu Ser Thr Ile Lys Lys Asn Ile Glu Asn  
 50 55 60

Gly Leu Ile Arg Ser Thr Ala Glu Phe Gln Arg Asp Ile Met Leu Met  
 65 70 75 80

Phe Gln Asn Ala Val Met Tyr Asn Ser Ser Asp His Asp Val Tyr His  
 85 90 95

Met Ala Val Glu Met Gln Arg Asp Val Leu Glu Gln Ile Gln Gln Phe  
 100 105 110

Leu

<210> 29  
 <211> 106  
 <212> PRT  
 <213> Gallus gallus

<400> 29

Asn Leu Pro Thr Val Asp Pro Ile Ala Val Cys His Glu Leu Tyr Asn  
 1 5 10 15

Thr Ile Arg Asp Tyr Lys Asp Glu Gln Gly Arg Leu Leu Cys Glu Leu  
 20 25 30

Phe Ile Arg Ala Pro Lys Arg Arg Asn Gln Pro Asp Tyr Tyr Glu Val  
 35 40 45

Val Ser Gln Pro Ile Asp Leu Met Lys Ile Gln Gln Lys Leu Lys Met  
 50 55 60

Glu Glu Tyr Asp Asp Val Asn Val Leu Thr Ala Asp Phe Gln Leu Leu  
 65 70 75 80

Phe Asn Asn Ala Lys Ala Tyr Tyr Lys Pro Asp Ser Pro Glu Tyr Lys

85

90

95

Ala Ala Cys Lys Leu Trp Glu Leu Tyr Leu  
 100 105

<210> 30  
 <211> 112  
 <212> PRT  
 <213> Gallus gallus

<400> 30

Ser Ser Pro Gly Tyr Leu Lys Glu Ile Leu Glu Gln Leu Leu Glu Ala  
 1 5 10 15

Val Ala Val Ala Thr Asn Pro Ser Gly Arg Leu Ile Ser Glu Leu Phe  
 20 25 30

Gln Lys Leu Pro Ser Lys Val Gln Tyr Pro Asp Tyr Tyr Ala Ile Ile  
 35 40 45

Lys Glu Pro Ile Asp Leu Lys Thr Ile Ala Gln Arg Ile Gln Asn Gly  
 50 55 60

Thr Tyr Lys Ser Ile His Ala Met Ala Lys Asp Ile Asp Leu Leu Ala  
 65 70 75 80

Lys Asn Ala Lys Thr Tyr Asn Glu Pro Gly Ser Gln Val Phe Lys Asp  
 85 90 95

Ala Asn Ala Ile Lys Lys Ile Phe Asn Met Lys Lys Ala Glu Ile Glu  
 100 105 110

<210> 31  
 <211> 112  
 <212> PRT  
 <213> Gallus gallus

<400> 31

Thr Ser Phe Met Asp Thr Ser Asn Pro Leu Tyr Gln Leu Tyr Asp Thr  
 1 5 10 15

Val Arg Ser Cys Arg Asn Asn Gln Gly Gln Leu Ile Ser Glu Pro Phe  
 20 25 30

Phe Gln Leu Pro Ser Lys Lys Tyr Pro Asp Tyr Tyr Gln Gln Ile  
 35 40 45

Lys Thr Pro Ile Ser Leu Gln Gln Ile Arg Ala Lys Leu Lys Asn His  
 50 55 60

Glu Tyr Glu Thr Leu Asp Gln Leu Glu Ala Asp Leu Asn Leu Met Phe  
 65 70 75 80

Glu Asn Ala Lys Arg Tyr Asn Val Pro Asn Ser Ala Ile Tyr Lys Arg  
 85 90 95

Val Leu Lys Met Gln Gln Val Met Gln Ala Lys Lys Glu Leu Ala  
 100 105 110

<210> 32  
 <211> 113  
 <212> PRT  
 <213> Gallus gallus

<400> 32

Ser Lys Lys Asn Met Arg Lys Gln Arg Met Lys Ile Leu Tyr Asn Ala

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 1   | 5   | 10  | 15  |     |     |     |     |     |     |     |     |     |     |     |     |
| Val | Leu | Glu | Ala | Arg | Glu | Ser | Gly | Thr | Gln | Arg | Arg | Leu | Cys | Asp | Leu |
| 20  |     |     |     |     |     |     | 25  |     |     |     |     | 30  |     |     |     |
| Phe | Met | Val | Lys | Pro | Ser | Lys | Lys | Asp | Tyr | Pro | Asp | Tyr | Tyr | Lys | Ile |
| 35  |     |     |     |     |     |     | 40  |     |     |     | 45  |     |     |     |     |
| Ile | Leu | Glu | Pro | Met | Asp | Leu | Lys | Met | Ile | Glu | His | Asn | Ile | Arg | Asn |
| 50  |     |     |     |     |     |     | 55  |     |     |     | 60  |     |     |     |     |
| Asp | Lys | Tyr | Val | Gly | Glu | Glu | Ala | Met | Ile | Asp | Asp | Met | Lys | Leu | Met |
| 65  |     |     |     |     |     |     | 70  |     |     |     | 75  |     |     | 80  |     |
| Phe | Arg | Asn | Ala | Arg | His | Tyr | Asn | Glu | Glu | Gly | Ser | Gln | Val | Tyr | Asn |
| 85  |     |     |     |     |     |     | 90  |     |     |     |     | 95  |     |     |     |
| Asp | Ala | His | Met | Leu | Glu | Lys | Ile | Leu | Lys | Glu | Lys | Arg | Lys | Glu | Leu |
| 100 |     |     |     |     |     |     | 105 |     |     |     |     | 110 |     |     |     |

Gly

|       |               |
|-------|---------------|
| <210> | 33            |
| <211> | 115           |
| <212> | PRT           |
| <213> | Gallus gallus |
| <400> | 33            |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Lys | Lys | Ser | Lys | Tyr | Met | Thr | Pro | Met | Gln | Gln | Lys | Leu | Asn | Glu | Val |
| 1   |     |     |     |     | 5   |     |     |     | 10  |     |     |     | 15  |     |     |
| Tyr | Glu | Ala | Val | Lys | Asn | Tyr | Thr | Asp | Lys | Arg | Gly | Arg | Arg | Leu | Ser |
| 20  |     |     |     |     |     |     | 25  |     |     |     |     | 30  |     |     |     |
| Ala | Ile | Phe | Leu | Arg | Leu | Pro | Ser | Arg | Ser | Glu | Leu | Pro | Asp | Tyr | Tyr |
| 35  |     |     |     |     |     |     | 40  |     |     |     | 45  |     |     |     |     |
| Ile | Thr | Ile | Lys | Lys | Pro | Val | Asp | Met | Glu | Lys | Ile | Arg | Ser | His | Met |
| 50  |     |     |     |     |     |     | 55  |     |     |     | 60  |     |     |     |     |
| Met | Ala | Asn | Lys | Tyr | Gln | Asp | Ile | Asp | Ser | Met | Val | Glu | Asp | Phe | Val |
| 65  |     |     |     |     |     |     | 70  |     |     |     | 75  |     |     | 80  |     |
| Met | Met | Phe | Asn | Asn | Ala | Cys | Thr | Tyr | Asn | Glu | Pro | Glu | Ser | Leu | Ile |
| 85  |     |     |     |     |     |     | 90  |     |     |     |     | 95  |     |     |     |
| Tyr | Lys | Asp | Ala | Leu | Val | Leu | His | Lys | Val | Leu | Leu | Glu | Thr | Arg | Arg |
| 100 |     |     |     |     |     |     | 105 |     |     |     |     | 110 |     |     |     |

Glu Ile Glu  
115

|       |   |
|-------|---|
| <210> | 34  |
| <211> | 112   |
| <212> | PRT   |
| <213> | Description of unknown organism, see Jeanmougin et al., Trends in Biochem. Sci. 22:151-153 (1997) |

<400> 34

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| His | Asn | Ala | Pro | Phe | Asp | Lys | Thr | Lys | Phe | Asp | Glu | Val | Leu | Glu | Ala |
| 1   |     |     |     |     |     |     | 5   |     |     |     |     | 10  |     |     | 15  |
| Leu | Val | Gly | Leu | Lys | Asp | Asn | Glu | Gly | Asn | Pro | Phe | Asp | Asp | Ile | Phe |
| 20  |     |     |     |     |     |     | 25  |     |     |     |     | 30  |     |     |     |
| Glu | Glu | Leu | Pro | Ser | Lys | Arg | Tyr | Phe | Pro | Asp | Tyr | Tyr | Gln | Ile | Ile |

35

40

45

Gln Lys Pro Ile Cys Tyr Lys Met Met Arg Asn Lys Ala Lys Thr Gly  
 50 55 60

Lys Tyr Leu Ser Met Gly Asp Phe Tyr Asp Asp Ile Arg Leu Met Val  
 65 70 75 80

Ser Asn Ala Gln Thr Tyr Asn Met Pro Gly Ser Leu Val Tyr Glu Cys  
 85 90 95

Ser Val Leu Ile Ala Asn Thr Ala Asn Ser Leu Glu Ser Lys Asp Gly  
 100 105 110

&lt;210&gt; 35

&lt;211&gt; 113

&lt;212&gt; PRT

<213> Description of unknown organism, see Jeanmougin et al., Trends  
 in Biochem. Sci. 22:151-153 (1997)

&lt;400&gt; 35

Gly Thr Asn Glu Ile Asp Val Pro Lys Val Ile Gln Asn Ile Leu Asp  
 1 5 10 15

Ala Leu His Glu Glu Lys Asp Glu Gln Gly Arg Phe Leu Ile Asp Ile  
 20 25 30

Phe Ile Asp Leu Pro Ser Lys Arg Leu Tyr Pro Asp Tyr Tyr Glu Ile  
 35 40 45

Ile Lys Ser Pro Met Thr Ile Lys Met Leu Glu Lys Arg Phe Lys Lys  
 50 55 60

Gly Glu Tyr Thr Thr Leu Glu Ser Phe Val Lys Asp Leu Asn Gln Met  
 65 70 75 80

Phe Ile Asn Ala Lys Thr Tyr Asn Ala Pro Gly Ser Phe Val Tyr Glu  
 85 90 95

Asp Ala Glu Lys Leu Ser Gln Leu Ser Ser Ser Leu Ile Ser Ser Phe  
 100 105 110

Ser

&lt;210&gt; 36

&lt;211&gt; 113

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 36

Gly Thr Asn Glu Ile Asp Val Pro Lys Val Ile Gln Asn Ile Leu Asp  
 1 5 10 15

Ala Leu His Glu Glu Lys Asp Glu Gln Gly Arg Phe Leu Ile Asp Ile  
 20 25 30

Phe Ile Asp Leu Pro Ser Lys Arg Leu Tyr Pro Asp Tyr Tyr Glu Ile  
 35 40 45

Ile Lys Ser Pro Met Thr Ile Lys Met Leu Glu Lys Arg Phe Lys Lys  
 50 55 60

Gly Glu Tyr Thr Thr Leu Glu Ser Phe Val Lys Asp Leu Asn Gln Met  
 65 70 75 80

Phe Ile Asn Ala Lys Thr Tyr Asn Ala Pro Gly Ser Phe Val Tyr Glu

85

90

95

Asp Ala Glu Lys Leu Ser Gln Leu Ser Ser Ser Leu Ile Ser Ser Phe  
 100 105 110

Ser

<210> 37  
 <211> 114  
 <212> PRT  
 <213> Homo sapiens

&lt;400&gt; 37

Ser Pro Asn Pro Pro Asn Leu Thr Lys Lys Met Lys Lys Ile Val Asp  
 1 5 10 15

Ala Val Ile Lys Tyr Lys Asp Ser Ser Ser Gly Arg Gln Leu Ser Glu  
 20 25 30

Val Phe Ile Gln Leu Pro Ser Arg Lys Glu Leu Pro Glu Tyr Tyr Glu  
 35 40 45

Leu Ile Arg Lys Pro Val Asp Phe Lys Lys Ile Lys Glu Arg Ile Arg  
 50 55 60

Asn His Lys Tyr Arg Ser Leu Asn Asp Leu Glu Lys Asp Val Met Leu  
 65 70 75 80

Leu Cys Gln Asn Ala Gln Thr Phe Asn Leu Glu Gly Ser Leu Ile Tyr  
 85 90 95

Glu Asp Ser Ile Val Leu Gln Ser Val Phe Thr Ser Val Arg Gln Lys  
 100 105 110

Ile Glu

<210> 38  
 <211> 113  
 <212> PRT  
 <213> Gallus gallus

&lt;400&gt; 38

Ser Pro Asn Pro Pro Lys Leu Thr Lys Gln Met Asn Ala Ile Ile Asp  
 1 5 10 15

Thr Val Ile Asn Tyr Lys Asp Ser Ser Gly Arg Gln Leu Ser Glu Val  
 20 25 30

Phe Ile Gln Leu Pro Ser Arg Lys Glu Leu Pro Glu Tyr Tyr Glu Leu  
 35 40 45

Ile Arg Lys Pro Val Asp Phe Lys Lys Ile Lys Glu Arg Ile Arg Asn  
 50 55 60

His Lys Tyr Arg Ser Leu Gly Asp Leu Glu Lys Asp Val Met Leu Leu  
 65 70 75 80

Cys His Asn Ala Gln Thr Phe Asn Leu Glu Gly Ser Gln Ile Tyr Glu  
 85 90 95

Asp Ser Ile Val Leu Gln Ser Val Phe Lys Ser Ala Arg Gln Lys Ile  
 100 105 110

Ala

<210> 39  
 <211> 114  
 <212> PRT  
 <213> Gallus gallus

<400> 39

Ser Pro Asn Pro Pro Asn Leu Thr Lys Lys Met Lys Lys Ile Val Asp  
 1 5 10 15

Ala Val Ile Lys Tyr Lys Asp Ser Ser Ser Gly Arg Gln Leu Ser Glu  
 20 25 30

Val Phe Ile Gln Leu Pro Ser Arg Lys Glu Leu Pro Glu Tyr Tyr Glu  
 35 40 45

Leu Ile Arg Lys Pro Val Asp Phe Lys Lys Ile Lys Glu Arg Ile Arg  
 50 55 60

Asn His Lys Tyr Arg Ser Leu Asn Asp Leu Glu Lys Asp Val Met Leu  
 65 70 75 80

Leu Cys Gln Asn Ala Gln Thr Phe Asn Leu Glu Val Ser Leu Ile Tyr  
 85 90 95

Glu Asp Ser Ile Val Leu Gln Ser Val Phe Thr Ser Val Arg Gln Lys  
 100 105 110

Ile Glu

<210> 40  
 <211> 105  
 <212> PRT  
 <213> Homo sapiens

<400> 40

Ala Lys Leu Ser Pro Ala Asn Gln Arg Lys Cys Glu Arg Val Leu Leu  
 1 5 10 15

Ala Leu Phe Cys His Glu Pro Cys Arg Pro Leu His Gln Leu Ala Thr  
 20 25 30

Asp Ser Thr Phe Ser Leu Asp Gln Pro Gly Gly Thr Leu Asp Leu Thr  
 35 40 45

Leu Ile Arg Ala Arg Leu Gln Glu Lys Leu Ser Pro Pro Tyr Ser Ser  
 50 55 60

Pro Gln Glu Phe Ala Gln Asp Val Gly Arg Met Phe Lys Gln Phe Asn  
 65 70 75 80

Lys Leu Thr Glu Asp Lys Ala Asp Val Gln Ser Ile Ile Gly Leu Gln  
 85 90 95

Arg Phe Phe Glu Thr Arg Met Asn Glu  
 100 105

<210> 41  
 <211> 105  
 <212> PRT  
 <213> Mus musculus

<400> 41

Ala Lys Leu Ser Pro Ala Asn Gln Arg Lys Cys Glu Arg Val Leu Leu  
 1 5 10 15

Ala Leu Phe Cys His Glu Pro Cys Arg Pro Leu His Gln Leu Ala Thr  
 20 25 30

Asp Ser Thr Phe Ser Met Glu Gln Pro Gly Gly Thr Leu Asp Leu Thr  
 35 40 45

Leu Ile Arg Ala Arg Leu Gln Glu Lys Leu Ser Pro Pro Tyr Ser Ser  
 50 55 60

Pro Gln Glu Phe Ala Gln Asp Val Gly Arg Met Phe Lys Gln Phe Asn  
 65 70 75 80

Lys Leu Thr Glu Asp Lys Ala Asp Val Gln Ser Ile Ile Gly Leu Gln  
 85 90 95

Arg Phe Phe Glu Thr Arg Met Asn Asp  
 100 105

<210> 42

<211> 108

<212> PRT

<213> Mus sp.

<400> 42

Thr Lys Leu Thr Pro Ile Asp Lys Arg Lys Cys Glu Arg Leu Leu Leu  
 1 5 10 15

Phe Leu Tyr Cys His Glu Met Ser Leu Ala Phe Gln Asp Pro Val Pro  
 20 25 30

Leu Thr Val Pro Asp Tyr Tyr Lys Ile Ile Lys Asn Pro Met Asp Leu  
 35 40 45

Ser Thr Ile Lys Lys Arg Leu Gln Glu Asp Tyr Cys Met Tyr Thr Lys  
 50 55 60

Pro Glu Asp Phe Val Ala Asp Phe Arg Leu Ile Phe Gln Asn Cys Ala  
 65 70 75 80

Glu Phe Asn Glu Pro Asp Ser Glu Val Ala Asn Ala Gly Ile Lys Leu  
 85 90 95

Glu Ser Tyr Phe Glu Glu Leu Leu Lys Asn Leu Tyr  
 100 105

<210> 43

<211> 14

<212> PRT

<213> artificial sequence

<220>

<221> X

<222> (1)...(2)

<223> X can be any single amino acid

<220>

<221> X

<222> (4)...(4)

<223> X is two to three amino acids. Each of these can be any amino acid

d

<220>

<221> X

<222> (6)...(6)

<223> X is five to eight amino acids. Each of these can be any amino  
ac  
id

<220>  
<221> X  
<222> (7)..(7)  
<223> X is a single amino acid that can be Pro, Lys, or His.

<220>  
<221> X  
<222> (8)..(8)  
<223> X is a single amino acid that can be any amino acid.

<220>  
<221> X  
<222> (10)..(10)  
<223> X is a single amino acid that can be a Tyr, Phe, or His.

<220>  
<221> X  
<222> (11)..(11)  
<223> X is five amino acids. Each of these can be any amino acid.

<220>  
<221> X  
<222> (13)..(13)  
<223> X is a single amino acid that can be Met, Ile, or Val.

<400> 43

Xaa Xaa Phe Xaa Pro Xaa Xaa Xaa Tyr Xaa Xaa Pro Xaa Asp  
1 5 10

<210> 44  
<211> 20  
<212> PRT  
<213> artificial sequence

<400> 44

Trp Pro Phe Met Glu Pro Val Lys Arg Thr Glu Ala Pro Gly Tyr Tyr  
1 5 10 15

Glu Val Ile Arg  
20

<210> 45  
<211> 101  
<212> PRT  
<213> Human immunodeficiency virus type 1

<400> 45

Met Glu Pro Val Asp Pro Arg Leu Glu Pro Trp Lys His Pro Gly Ser  
1 5 10 15

Gln Pro Lys Thr Ala Ser Asn Asn Cys Tyr Cys Lys Arg Cys Cys Leu  
20 25 30

His Cys Gln Val Cys Phe Thr Lys Lys Gly Leu Gly Ile Ser Tyr Gly  
35 40 45

Arg Lys Lys Arg Arg Gln Arg Arg Arg Ala Pro Gln Asp Ser Lys Thr  
 50 55 60

His Gln Val Ser Leu Ser Lys Gln Pro Ala Ser Gln Pro Arg Gly Asp  
 65 70 75 80

Pro Thr Gly Pro Lys Glu Ser Lys Lys Val Glu Arg Glu Thr Glu  
 85 90 95

Thr Asp Pro Glu Asp  
 100

<210> 46

<211> 7

<212> PRT

<213> artificial sequence

<220>

<221> X

<222> (5)..(5)

<223> X is one to three amino acids. Each amino acid can be any amino acid

<400> 46

Tyr Gly Arg Lys Xaa Arg Gln  
 1 5

<210> 47

<211> 10

<212> PRT

<213> artificial sequence

<400> 47

Ser Tyr Gly Arg Lys Lys Arg Arg Gln Arg  
 1 5 10

<210> 48

<211> 10

<212> PRT

<213> artificial

<220>

<221> X

<222> (2)..(2)

<223> X is two to four amino acids. Each of these can be any amino acid

d

<220>

<221> X

<222> (4)..(4)

<223> X is two to four amino acids. Each of these can be any amino acid

d

<220>

<221> X

<222> (6)..(6)

<223> X is two to four amino acids. Each of these can be any amino acid

d

<220>

<221> X  
 <222> (8)..(8)  
 <223> X is one to three amino acids. Each of these can be any amino  
 ac  
 id

<220>  
 <221> X  
 <222> (10)..(10)  
 <223> X is a single amino acid that is either Ile, Leu, Met, or Val.

<400> 48

Phe Xaa Val Xaa Glu Xaa Tyr Xaa Val Xaa  
 1 5 10

<210> 49  
 <211> 62  
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<400> 49

Phe Met Glu Pro Val Lys Arg Thr Glu Ala Pro Gly Tyr Tyr Glu Val  
 1 5 10 15

Ile Arg Phe Pro Met Asp Leu Lys Thr Met Ser Glu Arg Leu Lys Asn  
 20 25 30

Arg Tyr Tyr Val Ser Lys Lys Leu Phe Met Ala Asp Leu Gln Arg Val  
 35 40 45

Phe Thr Asn Cys Lys Glu Tyr Asn Ala Ala Glu Ser Glu Tyr  
 50 55 60

<210> 50  
 <211> 11  
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<220>  
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 <223> X is an acetylated lysine (AcK).

<400> 50

Ser Tyr Gly Arg Xaa Lys Arg Arg Gln Arg Cys  
 1 5 10

<210> 51  
 <211> 11  
 <212> PRT  
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<220>  
 <221> X  
 <222> (5)..(5)  
 <223> X is an acetylated lysine (AcK)

<400> 51

Ser Ala Gly Arg Xaa Lys Arg Arg Gln Arg Cys  
 1 5 10

<210> 52  
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<212> PRT  
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<220>  
<221> X  
<222> (5)..(5)  
<223> X ia an acetylated lysine (Ack)

<400> 52

Ser Tyr Gly Ala Xaa Lys Arg Arg Gln Arg Cys  
1 5 10

<210> 53  
<211> 11  
<212> PRT  
<213> artificial sequence

<220>  
<221> X  
<222> (5)..(5)  
<223> X is an acetylated lysine (Ack).

<400> 53

Ser Tyr Gly Arg Xaa Ala Arg Arg Gln Arg Cys  
1 5 10

<210> 54  
<211> 11  
<212> PRT  
<213> artificial sequence

<220>  
<221> X  
<222> (5)..(5)  
<223> X is an acetylated lysine (Ack).

<400> 54

Ser Tyr Gly Arg Xaa Lys Ala Arg Gln Arg Cys  
1 5 10

<210> 55  
<211> 11  
<212> PRT  
<213> artificial sequence

<220>  
<221> X  
<222> (5)..(5)  
<223> X is an acetylated lysine (Ack)

<400> 55

Ser Tyr Gly Arg Xaa Lys Arg Ala Gln Arg Cys  
1 5 10

<210> 56  
<211> 11  
<212> PRT  
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<220>  
<221> X  
<222> (5)..(5)  
<223> X is an acetylated lysine (AcK)

<400> 56

Ser Tyr Gly Arg Xaa Lys Arg Arg Ala Arg Cys  
1 5 10

<210> 57  
<211> 11  
<212> PRT  
<213> artificial sequence

<220>  
<221> X  
<222> (6)..(6)  
<223> X is an acetylated lysine (AcK)

<400> 57

Ser Tyr Gly Arg Lys Xaa Arg Arg Gln Arg Cys  
1 5 10

<210> 58  
<211> 11  
<212> PRT  
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<220>  
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<222> (7)..(7)  
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<400> 58

Thr Asn Cys Tyr Cys Lys Xaa Cys Cys Phe His  
1 5 10

<210> 59  
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<212> PRT  
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<220>  
<221> X  
<222> (16)..(16)  
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<400> 59

Ser Gly Arg Gly Lys Gly Gly Lys Gly Leu Gly Lys Gly Gly Ala Xaa  
1 5 10 15

Arg His Arg Lys  
20